

## 3.0 AOC 2/3 - AREA T-38 AND SMOKE RANGES R AND S

### 3.1 LOCATION OF STUDY AREA

Area T-38 and Smoke Ranges R and S comprise approximately 164 acres within the Cantonment Area at the Fort McClellan, Alabama Army Installation (Fig. 1). The study area boundary was devised by adding a 150-ft buffer outside of the Area T-38 and Smoke Ranges R and S site boundary.

### 3.2 AERIAL PHOTOGRAPH QUALITY ISSUES

A few photograph quality issues were encountered during photograph interpretation. They were corrected as follows:

- X **Quality** - In many areas of the photographs, the dynamic range of brightness values was insufficient to distinguish land cover classes. Due to extreme brightness (almost white), ground cover such as grass, bare soil, trails, and roads could not be differentiated. Where appropriate, problem areas of the photographs were subset and image enhancement techniques were applied. Simple adjustments to the brightness and contrast were conducted, or, in more severe cases, a histogram equalization in the range of the lookup table was performed on the specific area where interpretation was difficult.
- X **Rectification** - Although second- and third-order transformations were used in the rectification of the digital photographs, all of the photograph rectification within Area T-38 and Smoke Ranges R and S contained too much error to accurately digitize land use/cover polygons. The primary factor contributing to the error was terrain distortion. Factors contributing to the error included: (1) insufficient ground control points (GCPs) due to pronounced changes in land cover between years, (2) photographic distortion (location of the site in relation to the center of the photograph and the angle of the camera/aircraft when the photograph was acquired), and (3) terrain distortion. To improve the photographic registration of the study area, the site was subset from the rectified digital photographs in question and the newly-created image files were rectified separately. In many cases, the subsets had to be rubbersheeted to allow for accurate digitization of land use and land cover vectors.

### 3.3 FINDINGS

Complete photographic coverage of the study area was available for eight years of photographic coverage from 1937 to 1994. A total of 605 anomalies were identified in the year-by-year land cover analysis (Fig. 2). All anomalies were inspected to ascertain the cause of each anomaly. All anomalies were resolved except for two unidentified objects. Anomalies potentially associated with waste disposal or chemical training activities were determined to be of potential concern and should be assessed by the USAESCH. During the final quality assurance review of the land use/cover anomalies, eight anomalies were determined to be caused by photographic interpretation error. These anomalies are identified as "QA" in Table 1 and will not be discussed further. Of the anomalies identified, 447 were caused by new roads; pre-existing and former roads and trails; construction and removal of buildings; parking lots; landscaping; pre-existing and former unidentified objects; cleared areas associated with construction of buildings, roads, or parking lots; and pre-existing and former

cleared areas. The remaining 150 anomalies are of potential concern and were the result of trails, unidentified structures, excavation, and the clearing of trees and groundcover.

**1937.** Five anomalous areas were identified during a visual inspection of the photographs (see Table 1 and Fig. 3a). One anomaly was the result of a building. The remaining four anomalies are of potential concern and were the result of cleared areas (3 anomalies) and a trail (1 anomaly).

**1937 to 1940.** Fifteen anomalies were identified during the land cover change analysis for the years 1937 and 1940 (see Table 1 and Fig. 3b). Five anomalies were the result of a pre-existing building, a pre-existing trail, and pre-existing cleared areas. The remaining ten anomalies are of potential concern and were the result of the clearing of trees (7 anomalies) and other cleared areas (3 anomalies).

**1940 to 1944.** Sixty-two anomalies were identified during the land cover analysis for the years 1940 and 1944 (see Table 1 and Fig. 3c). Thirty of the anomalies were the result of new roads, new and pre-existing buildings, landscaping, pre-existing cleared areas, and a pre-existing trail. The remaining thirty-two anomalies are of potential of concern and were the result of new trails (2 anomalies), unidentified objects (2 anomalies), an above-ground tank (1 anomaly), the clearing of trees (9 anomalies), and other cleared areas (18 anomalies).

**1944 to 1954.** Ninety-nine anomalies were identified during the land cover change analysis for the years 1944 and 1954 (see Table 1 and Fig. 3d). Ninety-four of the anomalies were the result of new and pre-existing roads, former trails, pre-existing buildings, pre-existing landscaping, pre-existing unidentified objects, a pre-existing above-ground storage tank, pre-existing and former cleared areas, and a new building complex including buildings and landscaping. The remaining five anomalies are of potential concern and were the result of trails (2 anomalies), the clearing of trees (2 anomalies), and another cleared area (1 anomaly).

**1954 to 1961.** One hundred thirty-five anomalies were identified during the land cover change analysis for the years 1954 and 1961 (see Table 1 and Fig. 3e). Ninety-three of the anomalies were the result of new, pre-existing, and former roads; pre-existing and former trails; former unidentified objects; new, pre-existing, and former buildings; new and pre-existing landscaping; pre-existing and former cleared areas; and a pre-existing above-ground storage tank. The remaining forty-two anomalies are of potential concern and were the result of trails (12 anomalies), the clearing of trees (22 anomalies), and other cleared areas (8 anomalies).

**1961 to 1969.** One hundred forty anomalies were identified during the land cover change analysis for the years 1961 and 1969 (see Table 1 and Fig. 3f). Ninety-seven of the anomalies were the result of new, pre-existing, or former roads; pre-existing or former trails; new, pre-existing, or former buildings; new or pre-existing landscaping; pre-existing or former cleared areas; cleared areas associated with building construction; and a pre-existing above-ground storage tank. The remaining forty-three anomalies are of potential concern and were the result of the clearing of trees (25 anomalies) and other cleared areas (18 anomalies).

**1969 to 1982.** Ninety-three anomalies were identified during the land cover change analysis for the years 1969 and 1982 (see Table 1 and Fig. 3g). Eighty-seven of the anomalies were the result of new, pre-existing, and former roads; former trails; pre-existing and former cleared areas; new, pre-existing, and former buildings; and a pre-existing above-ground storage tank. The remaining six anomalies are of potential concern and were the result of the clearing of trees (5 anomalies) and another cleared area (1 anomaly).

**Fig 1**



**Fig 2**



**1982 to 1994.** Forty-eight anomalies were identified during the land cover change analysis for the years 1982 and 1994 (see Table 1 and Fig. 3h). Forty anomalies were the result of new, pre-existing, and former roads; pre-existing and former cleared areas; new, pre-existing, and former buildings; and a pre-existing above-ground storage tank. The remaining eight anomalies are of potential concern and were the result of the clearing of trees (8 anomalies).

**Table 1. T-38 and the Smoke Ranges - Anomaly Resolution**

<b>Of Potential Concern?</b>	<b>Anomaly #</b>	<b>Year of Change</b>	<b>Discussion</b>	<b>Related Anomalies<sup>1</sup></b>
Yes	0	1937	Cleared area	None
	1	1937	Building	
Yes	2	1937	Cleared area	10, 13, 55, 59, 155, 166, 167, 178, 297, 298, 300, 412
Yes	3	1937	Cleared area	15, 60, 61, 163, 297
Yes	4	1937	Trail	16, 62, 64, 65, 160, 161, 162, 164, 301
Yes	5	1940	Trees cleared	26
Yes	6	1940	Trees cleared	None
Yes	7	1940	Cleared area	29, 105
Yes	8	1940	Trees cleared	35, 48
Yes	9	1940	Trees cleared	52
	10	1940	Pre-existing cleared area (first visible 1937)	
	11	1940	Pre-existing building (first visible 1937)	
Yes	12	1940	Cleared area	59, 165-167, 298, 412
	13	1940	Pre-existing cleared area (first visible 1937)	
Yes	14	1940	Cleared area	59, 167
	15	1940	Pre-existing cleared area (first visible 1937)	
	16	1940	Pre-existing trail (first visible 1937)	
Yes	17	1940	Trees cleared	57
Yes	18	1940	Trees cleared	71
Yes	19	1940	Trees cleared	None
Yes	20	1944	Cleared area	83, 183
Yes	21	1944	Trail	85
	22	1944	Road	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	23	1944	Unidentified structure	89, 201, 202
Yes	24	1944	Trees cleared	84, 87, 88
Yes	25	1944	Trees cleared	None
Yes	26	1944	Cleared area	94-97, 102-106, 203-206, 211-218, 438-442, 468-470, 476, 478
Yes	27	1944	Trail	101
Yes	28	1944	Trees cleared	104
	29	1944	Pre-existing cleared area (first visible 1940)	
	30	1944	Road	
	31	1944	Road	
	32	1944	Road	
	33	1944	Landscaping	
Yes	34	1944	Cleared area	106-108, 215, 217, 219, 220, 222, 444
Yes	35	1944	Cleared area	106, 107, 219-221, 223, 446
	36	1944	Road	
	37	1944	Road	
	38	1944	Landscaping	
	39	1944	Building	
	40	1944	Building	
	41	1944	Building	
	42	1944	Landscaping	
	43	1944	Building	
	44	1944	Building	
	45	1944	Building	
	46	1944	Building	
	47	1944	Building	
Yes	48	1944	Cleared area	151
Yes	49	1944	Cleared area	151
Yes	50	1944	Unidentified objects	150

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	51	1944	Trees cleared	None
Yes	52	1944	Cleared area	151
	53	1944	Road	
	54	1944	Pre-existing building (first visible 1937)	
	55	1944	Pre-existing cleared area (first visible 1937)	
Yes	56	1944	Structure (above -ground storage tank)	156, 302, 417, 530, 595
Yes	57	1944	Cleared area	168
Yes	58	1944	Cleared area	168
	59	1944	Pre-existing cleared area (first visible 1937)	
	60	1944	Pre-existing cleared area (first visible 1937)	
	61	1944	Former cleared area (first visible 1937)	
	62	1944	Pre-existing trail (first visible 1937)	
Yes	63	1944	Trees cleared	None
Yes	64	1944	Cleared area (also former trail - first visible 1937)	4, 16, 155
	65	1944	Road (also part of former trail - first visible 1937)	
	66	1944	Road	
	67	1944	QA	
Yes	68	1944	Cleared area	None
Yes	69	1944	Cleared area	175
Yes	70	1944	Trees cleared	169
Yes	71	1944	Trees cleared	170-172, 174
Yes	72	1944	Trees cleared	170
	73	1944	Road	
	74	1944	Road	
Yes	75	1944	Trees cleared	None
Yes	76	1944	Cleared area	172
Yes	77	1944	Trees cleared	None
Yes	78	1944	Trees cleared	None

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	79	1944	Trees cleared	None
Yes	80	1944	Cleared area	182
Yes	81	1944	Trail	181
	82	1944	Road	
	83	1954	Pre-existing cleared area (first visible 1944)	
Yes	84	1954	Trail (includes cleared area along trail)	185, 186, 324
	85	1954	Former trail (first visible 1944)	
	86	1954	Former road (first visible 1944)	
	87	1954	Road	
Yes	88	1954	Trail	189, 325, 326, 331, 332, 334, 461, 462
	89	1954	Pre-existing unidentified structure (first visible 1944)	
	90	1954	Pre-existing road (first visible 1944)	
	91	1954	Road	
	92	1954	Road	
	93	1954	Former road (first visible 1944)	
	94	1954	Former cleared area (first visible 1944)	
	95	1954	Pre-existing cleared area (first visible 1944)	
	96	1954	Former cleared area (first visible 1944)	
	97	1954	Former cleared area (first visible 1944)	
Yes	98	1954	Cleared area	252-257, 260-263, 279, 342, 491, 494
	99	1954	Former road (first visible 1944)	
	100	1954	Road	
	101	1954	Former trail (first visible 1944)	
	102	1954	Former cleared area (first visible 1944)	
	103	1954	Former cleared area (first visible 1944)	
	104	1954	Former cleared area (first visible 1944)	
	105	1954	Former cleared area (first visible 1940)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	106	1954	Pre-existing cleared area (first visible 1944)	
	107	1954	Former cleared area (first visible 1944)	
	108	1954	Former cleared area (first visible 1944)	
	109	1954	Pre-existing road (first visible 1944)	
	110	1954	Pre-existing landscaping (first visible 1944)	
	111	1954	Building complex: building	
	112	1954	Building complex: landscaping	
	113	1954	Building complex: building	
	114	1954	Building complex: building (also part of former building - first visible 1944)	
	115	1954	Building complex: building	
	116	1954	Building complex: landscaping (former building - first visible 1944)	
	117	1954	Building complex: building (also part of former building - first visible 1944)	
	118	1954	Building complex: building	
	119	1954	Building complex: landscaping (former building - first visible 1944)	
	120	1954	Building complex: building	
	121	1954	Building complex: building	
	122	1954	Building complex: pre-existing landscaping (first visible 1944)	
	123	1954	Building complex: building	
	124	1954	Building complex: building	
	125	1954	Building complex: building (also part of former building - first visible 1944)	
	126	1954	Building complex: building	
	127	1954	Building complex: building (also part of former building - first visible 1944)	
	128	1954	Building complex: landscaping (former building - first visible 1944)	
	129	1954	Building complex: landscaping (former building - first visible 1944)	
	130	1954	Building complex: landscaping (former building - first visible 1944)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	131	1954	Building complex: building	
	132	1954	Building complex: building (also part of former building - first visible 1944)	
	133	1954	Building complex: landscaping (former building - first visible 1944)	
	134	1954	Building complex: building	
	135	1954	Building complex: building (also part of former building - first visible 1944)	
	136	1954	Building complex: building	
	137	1954	Building complex: landscaping (former building - first visible 1944)	
	138	1954	Building complex: building	
	139	1954	Building complex: building (also part of former building - first visible 1944)	
	140	1954	Building complex: building	
	141	1954	Building complex: building (also part of former building - first visible 1944)	
	142	1954	Building complex: landscaping (former building - first visible 1944)	
	143	1954	Building complex: landscaping (former building - first visible 1944)	
	144	1954	Building complex: building	
	145	1954	Building complex: pre-existing landscaping (first visible 1944)	
	146	1954	Building complex: pre-existing landscaping (first visible 1944)	
	147	1954	Building complex: pre-existing landscaping (first visible 1944)	
	148	1954	Building complex: pre-existing building (first visible 1944)	
	149	1954	Building complex: pre-existing landscaping (first visible 1944)	
	150	1954	Former unidentified objects (first visible 1944)	
	151	1954	Former cleared area (first visible 1944)	
	152	1954	QA	
	153	1954	Pre-existing road (first visible 1944)	
	154	1954	Pre-existing building (first visible 1937)	
	155	1954	Former cleared area (first visible 1937)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	156	1954	Pre-existing structure (above-ground storage tank - first visible 1944)	
	157	1954	Pre-existing road (first visible 1944)	
	158	1954	Former road (first visible 1944)	
	159	1954	Former road (first visible 1944; trail in 1940/1937))	
	160	1954	Pre-existing trail (first visible 1937)	
	161	1954	Former trail (first visible 1937)	
Yes	162	1954	Cleared area (former trail - first visible 1937)	62, 297, 411, 414, 529
	163	1954	Pre-existing cleared area (first visible 1937)	
	164	1954	Former trail (first visible 1937)	
	165	1954	Former cleared area (first visible 1940)	
	166	1954	Pre-existing cleared area (first visible 1937)	
	167	1954	Former cleared area (first visible 1937)	
	168	1954	Former cleared area (first visible 1944)	
	169	1954	Road	
	170	1954	Former cleared area (first visible 1944)	
	171	1954	Former cleared area (first visible 1944)	
	172	1954	Former cleared area (first visible 1944)	
	173	1954	Pre-existing road (first visible 1944)	
	174	1954	Former cleared area (first visible 1944)	
	175	1954	Former cleared area (first visible 1944)	
Yes	176	1954	Trees cleared	None
Yes	177	1954	Trees cleared	None
	178	1954	Former cleared area (first visible 1937)	
	179	1954	Former road (first visible 1944)	
	180	1954	Former road (first visible 1944)	
	181	1954	Former trail (first visible 1944)	
	182	1954	Former cleared area (first visible 1944)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	183	1961	Former cleared area (first visible 1944)	
Yes	184	1961	Trail	321, 322
	185	1961	Pre-existing trail (first visible 1954)	
	186	1961	Former trail (first visible 1954)	
Yes	187	1961	Trail	323
	188	1961	Pre-existing road (first visible 1954)	
	189	1961	Pre-existing road (first visible 1954)	
	190	1961	Pre-existing trail widened (trail - first visible 1954)	
	191	1961	Pre-existing trail widened (trail - first visible 1954)	
	192	1961	Former road (first visible 1944)	
	193	1961	Road	
	194	1961	Pre-existing road (first visible 1944)	
	195	1961	Road	
	196	1961	Former road (first visible 1944)	
	197	1961	Pre-existing road (first visible 1944)	
	198	1961	Former road (first visible 1944)	
	199	1961	Road	
	200	1961	Road	
	201	1961	Former unidentified structure (first visible 1944)	
	202	1961	Road (also former unidentified structure first visible 1944)	
	203	1961	Former cleared area (first visible 1944)	
	204	1961	Pre-existing cleared area (first visible 1944)	
	205	1961	Road (also former cleared area - first visible 1944)	
	206	1961	Former cleared area (first visible 1944)	
	207	1961	Road	
Yes	208	1961	Cleared area	440
Yes	209	1961	Cleared area	440
	210	1961	Former cleared area (first visible 1944)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	211	1961	Pre-existing cleared area (first visible 1944)	
	212	1961	Former cleared area (first visible 1944)	
	213	1961	Former cleared area (first visible 1944)	
	214	1961	Pre-existing cleared area (first visible 1944)	
	215	1961	Road (former cleared area - first visible 1944)	
	216	1961	Pre-existing cleared area (first visible 1944)	
	217	1961	Former cleared area (first visible 1944)	
	218	1961	Former cleared area (first visible 1944)	
	219	1961	Former cleared area (first visible 1944)	
	220	1961	Former cleared area (first visible 1944)	
	221	1961	Former cleared area (first visible 1944)	
	222	1961	Pre-existing cleared area (first visible 1944)	
	223	1961	Former cleared area (first visible 1944)	
	224	1961	Pre-existing road (first visible 1944)	
	225	1961	Pre-existing building (first visible 1954)	
	226	1961	Landscaping (former building - first visible 1954)	
	227	1961	Building	
	228	1961	Landscaping (former building - first visible 1954)	
	229	1961	Pre-existing building (first visible 1954)	
	230	1961	Landscaping (former building - first visible 1954)	
	231	1961	Landscaping (former building - first visible 1954)	
	232	1961	Building (also former building - partially visible 1944, partially visible 1954)	
	233	1961	Building (also former building - partially visible 1944, partially visible 1954)	
	234	1961	Landscaping (former building - partially visible 1944, partially visible 1954)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	235	1961	Landscaping (former building - first visible 1954)	
	236	1961	Building (also former building - first visible 1954)	
	237	1961	Building (also former building – partially visible 1944, partially visible 1954)	
	238	1961	Landscaping (former building - partially visible 1944, partially visible 1954)	
	239	1961	Landscaping (former building - first visible 1954)	
	240	1961	Landscaping (former building - partially visible 1944, partially visible 1954)	
	241	1961	Building (also former building - partially visible 1944, partially visible 1954)	
	242	1961	Building (also former building - partially visible 1944, partially visible 1954)	
	243	1961	Landscaping (former building - partially visible 1944, partially visible 1954)	
	244	1961	Pre-existing building (first visible 1954)	
	245	1961	Building (also former building - partially visible 1944, partially visible 1954)	
	246	1961	Pre-existing landscaping (first visible 1944)	
	247	1961	Former building (partially visible 1944, partially visible 1954)	
	248	1961	Pre-existing landscaping (first visible 1944)	
	249	1961	QA	
	250	1961	Trees cleared (related to 1969 construction activities)	
	251	1961	Pre-existing road (first visible 1944)	
	252	1961	Road (former cleared area - first visible 1954)	
	253	1961	Building (former cleared area - first visible 1954)	
	254	1961	Building (former cleared area - first visible 1954)	
	255	1961	Building (former cleared area - first visible 1954)	
	256	1961	Pre-existing cleared area (first visible 1954)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	257	1961	Building (former cleared area - first visible 1954)	
	258	1961	Building	
Yes	259	1961	Cleared area	342, 345, 352, 353, 494, 497
Yes	260	1961	Trail (former cleared area - first visible 1954)	385
	261	1961	Former cleared area (first visible 1954)	
	262	1961	Former cleared area (first visible 1954)	
	263	1961	Former cleared area (first visible 1954)	
Yes	264	1961	Trees cleared	None
Yes	265	1961	Trail	385
Yes	266	1961	Trail (also part of former road - first visible 1954)	385
	267	1961	Former road (first visible 1954)	
	268	1961	Cleared area (former road - first visible 1954; new road - first visible 1969)	
Yes	269	1961	Cleared area	357
Yes	270	1961	Trees cleared	None
Yes	271	1961	Trees cleared	None
Yes	272	1961	Trees cleared	524
Yes	273	1961	Trees cleared	None
Yes	274	1961	Trail	370, 385, 386, 389, 407-409
	275	1961	Road	
	276	1961	Former road (first visible 1954)	
Yes	277	1961	Trail (also part of former road - first visible 1954)	100, 363
	278	1961	Former road (first visible 1954)	
	279	1961	Former cleared area (first visible 1954)	
Yes	280	1961	Trees cleared	None
Yes	281	1961	Trail	360, 362, 363, 373, 374, 388, 389
Yes	282	1961	Trail	378, 383
Yes	283	1961	Trail	383, 392-396, 405, 475, 525, 526, 582, 590-592, 599

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	284	1961	Trees cleared	None
	285	1961	Building	
Yes	286	1961	Trees cleared	None
Yes	287	1961	Trees cleared	None
Yes	288	1961	Trees cleared	None
Yes	289	1961	Trees cleared	None
Yes	290	1961	Trees cleared	None
Yes	291	1961	Trail	393
Yes	292	1961	Trees cleared	None
Yes	293	1961	Trees cleared	None
Yes	294	1961	Trail	393
Yes	295	1961	Trail	401, 406
Yes	296	1961	Trees cleared	None
	297	1961	Pre-existing cleared area (first visible 1937); incorrectly coded as forest	
	298	1961	Pre-existing cleared area (first visible 1937)	
Yes	299	1961	Trees cleared	412
	300	1961	Former cleared area (first visible 1937)	
	301	1961	Former trail (first visible 1937)	
	302	1961	Pre-existing structure (above-ground storage tank - first visible 1944)	
	303	1961	Pre-existing building (first visible 1937)	
	304	1961	Pre-existing road (first visible 1954)	
	305	1961	Road	
Yes	306	1961	Cleared area	420
Yes	307	1961	Trees cleared	None
	308	1961	Road	
Yes	309	1961	Trees cleared	422, 535
Yes	310	1961	Trees cleared	None
Yes	311	1961	Cleared area	426, 428, 429, 536, 538, 539, 541-545, 599-602, 604

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	312	1961	Trees cleared	427, 535
Yes	313	1961	Trees cleared	424, 547
	314	1961	Road	
Yes	315	1961	Trees cleared	None
	316	1961	Pre-existing road (first visible 1944)	
	317	1961	Pre-existing road (first visible 1944)	
	318	1961	Road	
Yes	319	1969	Trees cleared	None
Yes	320	1969	Trees cleared	None
	321	1969	Former trail (first visible 1954)	
	322	1969	Former trail (first visible 1961)	
	323	1969	Former trail (first visible 1961)	
	324	1969	Former trail (first visible 1954)	
	325	1969	Former trail (first visible 1954)	
	326	1969	Former trail (first visible 1954)	
Yes	327	1969	Trees cleared	None
	328	1969	Former road (first visible 1954)	
	329	1969	Pre-existing trail extended (first visible 1961)	
	330	1969	Pre-existing trail extended (first visible 1954; also part of former road - first visible 1954)	
	331	1969	Pre-existing trail (first visible 1961)	
	332	1969	Former trail (partially visible 1954, partially visible 1961)	
	333	1969	Pre-existing trail widened (first visible 1961)	
	334	1969	Pre-existing trail (first visible 1961)	
Yes	335	1969	Cleared area	463
	336	1969	Pre-existing road (first visible 1944); incorrectly coded as cleared	
	337	1969	QA	
	338	1969	Road	
	339	1969	Road	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	340	1969	Pre-existing road (first visible 1961)	
	341	1969	Pre-existing building (first visible 1961)	
	342	1969	Pre-existing cleared area (first visible 1954)	
	343	1969	Pre-existing building (first visible 1961)	
	344	1969	Building	
	345	1969	Pre-existing cleared area (first visible 1961)	
	346	1969	Building	
	347	1969	Pre-existing building (first visible 1961)	
	348	1969	Road	
	349	1969	Former building (first visible 1961)	
	350	1969	Building (also part of former building - first visible 1961)	
	351	1969	Road	
	352	1969	Former cleared area (first visible 1961)	
	353	1969	Former cleared area (first visible 1961)	
Yes	354	1969	Trees cleared	None
Yes	355	1969	Trees cleared	None
Yes	356	1969	Trees cleared	None
	357	1969	Former cleared area (first visible 1961)	
Yes	358	1969	Trees cleared	None
Yes	359	1969	Cleared area	500
Yes	360	1969	Cleared area (part of former trail - first visible 1961)	500
Yes	361	1969	Cleared area	500
	362	1969	Road (former trail - first visible 1961)	
Yes	363	1969	Cleared area (part of former trail - first visible 1961)	277, 502
Yes	364	1969	Cleared area	502
Yes	365	1969	Cleared area	516-519
Yes	366	1969	Trees cleared	None

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	367	1969	Trees cleared	None
	368	1969	Road (part of former trail - first visible 1961)	
	369	1969	Former trail (first visible 1961)	
	370	1969	Former trail (first visible 1961)	
	371	1969	Road	
	372	1969	Road	
	373	1969	Road (part of former trail - first visible 1961)	
	374	1969	Former trail (first visible 1961)	
Yes	375	1969	Cleared area	502
	376	1969	Road	
	377	1969	Road	
	378	1969	Road (part of former trail - first visible 1961)	
	379	1969	Road	
Yes	380	1969	Trees cleared	None
Yes	381	1969	Trees cleared	None
Yes	382	1969	Cleared area	502
	383	1969	Former trail (first visible 1961)	
Yes	384	1969	Trees cleared	None
	385	1969	Former trail (first visible 1961)	
Yes	386	1969	Cleared area	274, 509, 571
Yes	387	1969	Trees cleared	None
	388	1969	Former trail (first visible 1961)	
	389	1969	Former trail (first visible 1961)	
	390	1969	Pre-existing building (first visible 1961)	
	391	1969	Road	
	392	1969	Former trail (first visible 1961)	
	393	1969	Former trail (first visible 1961)	
	394	1969	Road (former trail - first visible 1961)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	395	1969	Former trail (first visible 1961)	
	396	1969	Former trail (first visible 1961)	
Yes	397	1969	Trees cleared	None
Yes	398	1969	Trees cleared	None
Yes	399	1969	Trees cleared	None
Yes	400	1969	Trees cleared	None
	401	1969	Former trail (first visible 1961)	
Yes	402	1969	Trees cleared	None
Yes	403	1969	Trees cleared	None
Yes	404	1969	Trees cleared	None
	405	1969	Former trail (first visible 1961)	
	406	1969	Former trail (first visible 1961)	
	407	1969	Former trail (first visible 1961)	
	408	1969	Former trail (first visible 1961)	
	409	1969	Former trail (first visible 1961)	
Yes	410	1969	Trees cleared	None
Yes	411	1969	Trees cleared	None
	412	1969	Former cleared area (first visible 1937)	
Yes	413	1969	Trees cleared	None
	414	1969	Road	
	415	1969	Former building (first visible 1937)	
	416	1969	Trees cleared (associated with above-ground storage tank)	
	417	1969	Pre-existing structure (above-ground storage tank - first visible 1944)	
Yes	418	1969	Cleared area	532, 533
Yes	419	1969	Cleared area	534
	420	1969	Former cleared area (first visible 1961)	
	421	1969	Pre-existing road (first visible 1961)	
	422	1969	QA	
Yes	423	1969	Cleared area	552

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
Yes	424	1969	Cleared area	547, 548
Yes	425	1969	Cleared area	547
	426	1969	Pre-existing cleared area (first visible 1961)	
Yes	427	1969	Cleared area	535
	428	1969	Road (former cleared area - first visible 1961)	
	429	1969	Pre-existing cleared area (first visible 1961)	
	430	1969	Former cleared area (first visible 1961)	
Yes	431	1969	Trees cleared	537
	432	1969	Road	
Yes	433	1969	Cleared area	None
	434	1969	Former road (first visible 1944)	
	435	1969	Former road (first visible 1944)	
	436	1969	Former road (first visible 1944)	
	437	1969	Road	
	438	1969	Former cleared area (first visible 1944)	
	439	1969	Pre-existing cleared area (first visible 1944)	
	440	1969	Former cleared area (first visible 1944)	
	441	1969	Pre-existing cleared area (first visible 1944)	
	442	1969	Former cleared area (first visible 1940)	
	443	1969	Pre-existing road (first visible 1961)	
	444	1969	Former cleared area (first visible 1944)	
	445	1969	Building	
	446	1969	Trees cleared (associated with building construction)	
	447	1969	Former building (first visible 1944)	
	448	1969	Former landscaping (first visible 1944)	
	449	1969	Pre-existing building (first visible 1954)	
	450	1969	Pre-existing building (first visible 1954)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	451	1969	Pre-existing building (first visible 1954)	
	452	1969	Pre-existing building (first visible 1954)	
	453	1969	Pre-existing building (first visible 1954)	
	454	1969	Pre-existing building (first visible 1954)	
	455	1969	Pre-existing building (first visible 1954)	
	456	1969	Pre-existing building (first visible 1954)	
	457	1969	Pre-existing building (first visible 1954)	
	458	1969	Former landscaping (first visible 1944)	
	459	1969	QA	
Yes	460	1969	Trees cleared	None
	461	1982	Former trail (first visible 1954)	
	462	1982	Former trail (first visible 1961)	
	463	1982	Former cleared area (first visible 1969)	
	464	1982	Pre-existing road (first visible 1944); incorrectly coded in 1969	
	465	1982	Road	
	466	1982	Former road (first visible 1969)	
	467	1982	Former road (first visible 1961)	
	468	1982	Road (former cleared area - first visible 1944)	
	469	1982	Road (former cleared area - first visible 1944)	
	470	1982	Former cleared area (first visible 1944)	
	471	1982	QA	
	472	1982	Former road (first visible 1961)	
	473	1982	Road	
	474	1982	Road	
	475	1982	Pre-existing road (first visible 1961)	
	476	1982	Former cleared area (first visible 1944)	
Yes	477	1982	Trees cleared	559

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	478	1982	Former cleared area (first visible 1944)	
	479	1982	Pre-existing road (first visible 1961)	
	480	1982	Pre-existing building (first visible 1969)	
	481	1982	Former building (first visible 1954)	
	482	1982	Former building (first visible 1954)	
	483	1982	Former building (first visible 1954)	
	484	1982	Former building (first visible 1954)	
	485	1982	Former building (first visible 1954)	
	486	1982	Former building (first visible 1954)	
	487	1982	Former building (first visible 1954)	
	488	1982	Former building (first visible 1954)	
	489	1982	Former building (first visible 1954)	
	490	1982	Former building (first visible 1961)	
	491	1982	Former cleared area (first visible 1954)	
	492	1982	Pre-existing building (first visible 1969)	
	493	1982	Building	
	494	1982	Former cleared area (first visible 1954)	
	495	1982	Pre-existing road (first visible 1969)	
	496	1982	Pre-existing building (first visible 1969); incorrectly coded as forest	
	497	1982	Former cleared area (first visible 1961)	
	498	1982	Building	
	499	1982	Building	
	500	1982	Former cleared area (first visible 1969)	
	501	1982	Former road (first visible 1969)	
	502	1982	Former cleared area (first visible 1969)	
	503	1982	Pre-existing building (first visible 1961)	
	504	1982	Pre-existing building (first visible 1961)	
	505	1982	QA	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	506	1982	Pre-existing building (first visible 1961)	
	507	1982	QA	
	508	1982	Pre-existing road (first visible 1969)	
	509	1982	Former cleared area (first visible 1969)	
	510	1982	Road	
	511	1982	Former road (first visible 1969)	
	512	1982	Road	
	513	1982	Building	
	514	1982	Road	
	515	1982	Building	
	516	1982	Building (part of former cleared area - first visible 1969)	
	517	1982	Pre-existing cleared area (first visible 1969); incorrectly coded as forest	
	518	1982	Road (part of former cleared area - first visible 1969)	
	519	1982	Former cleared area (first visible 1969)	
	520	1982	Pre-existing building (first visible 1961)	
Yes	521	1982	Trees cleared	None
Yes	522	1982	Trees cleared	None
	523	1982	Building	
Yes	524	1982	Trees cleared	None
	525	1982	Pre-existing road (first visible 1969)	
	526	1982	Pre-existing road (first visible 1969)	
	527	1982	Road	
	528	1982	Pre-existing road (first visible 1944)	
	529	1982	Former road (first visible 1969)	
	530	1982	Pre-existing structure (above-ground storage tank - first visible 1944)	
	531	1982	Trees cleared (associated with above-ground storage tank)	
	532	1982	Former cleared area (first visible 1969)	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	533	1982	Former cleared area (first visible 1969)	
	534	1982	Former cleared area (first visible 1969)	
	535	1982	Former cleared area (partially visible 1969, partially visible 1961)	
Yes	536	1982	Cleared area	603, 604
	537	1982	Former cleared area (first visible 1969)	
	538	1982	Pre-existing cleared area (first visible 1969)	
	539	1982	Pre-existing cleared area (first visible 1961)	
	540	1982	Former road (first visible 1969)	
	541	1982	Pre-existing cleared area (first visible 1961)	
	542	1982	Former cleared area (first visible 1961)	
	543	1982	Road (former cleared area - first visible 1961)	
	544	1982	Pre-existing cleared area (first visible 1961)	
	545	1982	Former cleared area (first visible 1961)	
	546	1982	Former road (first visible 1961)	
	547	1982	Former cleared area (first visible 1969)	
	548	1982	Former cleared area (first visible 1969)	
Yes	549	1982	Trees cleared	None
	550	1982	Former road (first visible 1961)	
	551	1982	Former road (first visible 1961)	
	552	1982	Former cleared area (first visible 1969)	
	553	1982	Road	
	554	1982	Pre-existing road (first visible 1969)	
	555	1982	Pre-existing road (first visible 1969)	
	556	1982	Former road (first visible 1969)	
	557	1994	Pre-existing road (first visible 1944); incorrectly coded in 1969	
	558	1994	Former road (first visible 1982)	
	559	1994	Road	

<b>Of Potential Concern?</b>	<b>Anomaly #</b>	<b>Year of Change</b>	<b>Discussion</b>	<b>Related Anomalies<sup>1</sup></b>
Yes	560	1994	Trees cleared	None
	561	1994	Building (also former buildings first visible 1969 and 1982)	
	562	1994	Former building (first visible 1969)	
	563	1994	Former building (first visible 1982)	
	564	1994	Former building (first visible 1969)	
	565	1994	Pre-existing building (first visible 1969)	
	566	1994	Pre-existing building (first visible 1982)	
	567	1994	Pre-existing building (first visible 1982)	
	568	1994	Former building (first visible 1982)	
Yes	569	1994	Trees cleared	None
Yes	570	1994	Trees cleared	None
	571	1994	Building	
	572	1994	Road	
Yes	573	1994	Trees cleared	None
Yes	574	1994	Trees cleared	None
	575	1994	Pre-existing building (first visible 1982)	
	576	1994	Pre-existing building (first visible 1982)	
	577	1994	Road	
Yes	578	1994	Trees cleared	None
	579	1994	Building	
	580	1994	Former road (first visible 1982)	
	581	1994	Road	
	582	1994	Pre-existing road (first visible 1969)	
	583	1994	Building	
	584	1994	Pre-existing building (first visible 1961)	
	585	1994	Road	
	586	1994	Building	
	587	1994	Building	

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies <sup>1</sup>
	588	1994	Building	
	589	1994	Building	
	590	1994	Former road (first visible 1969)	
	591	1994	Former building (first visible 1982)	
	592	1994	Former road (first visible 1969)	
Yes	593	1994	Trees cleared	None
	594	1994	Pre-existing building (first visible 1969)	
	595	1994	Pre-existing structure (above-ground storage tank - first visible 1944)	
	596	1994	Former road (first visible 1982)	
	597	1994	Pre-existing road (first visible 1969)	
Yes	598	1994	Trees cleared	None
	599	1994	Former road (partially visible 1961, partially visible 1982)	
	600	1994	Former cleared area (first visible 1961)	
	601	1994	Former cleared area (first visible 1961)	
	602	1994	Former cleared area (first visible 1961)	
	603	1994	Pre-existing cleared area (first visible 1982)	
	604	1994	Former cleared area (first visible 1961)	

<sup>1</sup> Related anomalies refer to anomalies which are carried forward from year to year (e.g., a trail), anomalies which change (e.g., the extension or widening of a trail or cleared area), or occupy the same geographic location in different years. Related anomaly numbers have only been included for anomalies of potential concern due to the high number of anomalies associated with this area.

### 3.4 ANOMALIES OF POTENTIAL CONCERN

Five hundred ninety-seven anomalies were identified during the photographic interpretation of Area T-38 and Smoke Ranges R and S. All anomalies have been resolved except for two unidentified objects. One hundred fifty anomalies are considered to be of potential concern. To facilitate anomaly tracking, the anomalies of potential concern were mapped using the anomaly tracking number assigned in the year-by-year analysis (see Table 2 and Fig. 4). Table 2 provides information for each anomaly of potential concern, including the anomaly tracking number, coordinates for the approximate center of the anomaly (coordinates provided in Alabama State Plane East, North American Datum [NAD] 83), the year the change occurred, and the reason for the anomaly.

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Fig. 3a



Fig. 3b



Fig. 3c



Fig. 3d



Fig. 3e



Fig. 3f



Fig. 3g



Fig. 3h



**Table 2. T-38 and the Smoke Ranges - Anomalies of Concern**

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
0	676670.74500	1171653.87500	1937	This large grassy area is surrounded by forest in the 1937 photographs. Some ground scarring is evident east of the study area. In 1940, a row of small objects (unidentified) was visible in the northern portion of the area; the rest of the area remained clear. By 1944, sporadic vegetation growth is present within the area. Trees were cleared from this area between 1944 and 1954 (see anomaly of potential concern 176). Photographs acquired in 1961 show that vegetation regrowth was underway within the area. By 1969, a small portion of the area remained clear while the rest of the area had become reforested. In 1982, vegetation regrowth was evident in the small clear area. By 1994, the entire area had become reforested.
2	675461.01107	1171702.69416	1937	This area was cleared prior to 1937. The northern portion of the area remained clear in photographs acquired from 1940 through 1969. The 1982 photographs show that the northern portion of the area had become reforested. In 1940, a building was present in the southern portion of the cleared area. By 1944, an above-ground storage tank had been constructed in the southern portion of the previously cleared area (see anomaly of potential concern 56). The northern portion of the cleared area may have acted as a borrow area or material disposal area for construction activities associated with the facilities which were eventually built in the southern portion of this area.
3	675633.28672	1171949.36157	1937	This area was cleared prior to 1937. The area remained clear through 1944. By 1954, vegetation regrowth was underway and by 1962, the area had become reforested. This anomalous area is associated with activities underway within anomaly of potential concern 2.
4	675688.10170	1171647.87918	1937	A trail was present in this area in the 1937 photographs. This trail appears to have been used to connect the two large cleared areas associated with anomaly of potential concern 2. The trail was evident in photographs from 1937 through 1969.
5	673907.14438	1173566.40349	1940	Trees were cleared in this area prior to 1940. This area was also cleared between 1940 and 1944 (see anomaly of potential concern 26). The western portion of the area remained clear in 1954 while the eastern portion had begun to revegetate. Photographs acquired in 1961 show that the western portion of this area remained clear. By 1969, most of the area had become reforested, but two small areas in the western portion of the anomaly remained clear. By 1982, the area had become reforested (with the exception of a road which transects the area).

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
6	675128.73537	1172965.62103	1940	Some of the trees were cleared from this area before 1940. By 1944, an additional area had been cleared within the anomalous area. The 1954 photographs show some vegetation regrowth but by 1961, additional clearing had taken place. By 1969, the northern portion of the area was in use. By 1982, most of the site had become revegetated. In 1994, the northeastern portion of the anomaly contained buildings (use unknown).
7	673897.13134	1172795.39934	1940	This area was cleared prior to the acquisition of the 1940 photographs. The area is part of a much larger area that was cleared outside of the study area. Three linear parallel features exist within the anomalous area. The area remained clear through 1961. By 1969, vegetation regrowth was underway and by 1982, the area had become reforested. In 1994, a road transected the area (anomaly 559).
8	674217.54865	1172364.83858	1940	Trees were cleared in this area between 1937 and 1940. In 1944, the northern portion of the anomalous area was clear and several new buildings were present west of the anomaly. The southern portion of the anomaly had become reforested. In 1954, the northern portion of the anomaly was landscaped around the buildings seen in 1944 and roads leading to those buildings. Land cover remained unchanged in 1961. By 1969, a new building was present in the western portion of the anomaly. By 1982, the buildings that were present in the northern portion of the anomaly had been removed and the northern portion of the area had become reforested. The building in the western portion of the anomaly remained at the site through 1994.
9	674628.08332	1171964.31695	1940	Trees were cleared in this area between 1937 and 1940. In 1944, this area was cleared and several unidentified objects were present southwest of the anomaly. By 1954, the area had become revegetated. The area remained forested through 1994.
12	675479.96203	1171796.40595	1940	Trees were cleared from this area between 1937 and 1940. This anomalous area is likely an extension of the cleared area identified in 1937 photographs (identified as anomaly of potential concern 2). By 1961, the area had begun to revegetate, but by 1969, the area had been cleared again. The 1982 photographs show the area beginning to revegetate and by 1994, most of the area had become reforested.
14	675667.89911	1171725.54443	1940	Trees were cleared from this area between 1937 and 1940. This anomalous area is likely an extension of the cleared area identified in 1937 photographs (identified as anomaly of potential concern 2). By 1961, the area had begun to revegetate and by 1994, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
17	675415.26238	1171620.79262	1940	A few trees were cleared in this area between 1937 and 1940. The tree removal was probably associated with the activities underway in 1937 (anomaly of potential concern 2). In 1944, this area was cleared (see anomaly of potential concern 57). Portions of this area were cleared in later years in association with the above-ground storage tank which is located southwest of the anomaly.
18	675338.23899	1170822.83029	1940	Some of the trees were cleared in this area between 1937 and 1940. This area lies east of a building complex that was built prior to 1944. With the exception of a few trails and roads in the northern portion of the study area, the area exhibited little change in land cover. The area had become reforested by 1954.
19	676444.29489	1171238.75660	1940	Trees were cleared in this area between 1937 and 1940. This anomalous area lies southeast of anomaly of potential concern 0 (apparent in 1937 photographs). This anomaly may be associated with activities with anomaly 0. Vegetation growth did not appear affected by human activity after 1940.
20	673959.81715	1175173.25585	1944	This area was cleared between 1940 and 1944. The area is at the end of a trail (outside the study area) that was also constructed prior to 1944. This area should be investigated for possible burial activity.
21	674259.98372	1175087.03779	1944	This trail is present only in photographs acquired in 1944. The use of the trail is unknown.
23	673793.76755	1174282.33591	1944	An unidentified structure was present in this area in 1944. The area surrounding the structure was cleared of vegetation and roads led to and passed by this location. No changes in land cover were evident in 1954. By 1961, the structure was no longer evident, but the surrounding area remained clear and previously existing roads and trails remained in use. In 1969, the ground where the unidentified structure previously stood remained clear and vegetation regrowth was evident surrounding the location of the former structure. By 1994, the entire area had become reforested.
24	673825.70017	1174726.19925	1944	All of the trees were cleared in this area before 1944. Several trails were present in the area in 1944; the remainder of area remained clear. No significant change in land cover occurred until 1969 when vegetation regrowth was evident and six linear features were present in the northern portion of the area. By 1982, the area had become reforested.
25	674250.40394	1175141.32323	1944	Trees were cleared in this area between 1940 and 1944. By 1954, the area had become revegetated and no significant changes in land cover occurred over time through 1994.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
26	673876.79235	1173330.74400	1944	This area was cleared between 1940 and 1944. Trees had been removed prior to 1940 (see anomaly of potential concern 5). The western portion of the area remained clear through 1961 while the eastern area had become reforested by 1954. By 1969, vegetation regrowth was evident in the western portion of the area. In 1982, a new road transected the western portion of the area; the remainder of the area had become reforested.
27	674058.80825	1173247.71920	1944	A trail was present in this area in 1944. The trail was no longer in use in 1954.
28	674176.95893	1172992.25829	1944	Some of the trees were cleared in this area between 1940 and 1944. By 1954, the area had become reforested.
34	674141.83305	1172644.19279	1944	This area was cleared between 1940 and 1944. The area was located east of a building complex (new in 1944). The area remained clear through 1954. By 1961, vegetation regrowth was evident and by 1982, the area had become reforested.
35	674132.25327	1172478.14320	1944	This area was cleared between 1940 and 1944. The area was located east of a building complex (new in 1944). The area remained clear through 1954. By 1961, vegetation regrowth was evident and by 1982, the area had become reforested.
48	674288.72308	1172187.55641	1944	This area was cleared between 1940 and 1944. By 1954, the area was beginning to revegetate and by 1969, had become reforested.
49	674489.89855	1172142.85075	1944	This area was cleared between 1940 and 1944. By 1954, the area was beginning to revegetate and by 1969, had become reforested.
50	674438.80636	1172117.30466	1944	Twelve unidentified objects were present in this location in 1944. The objects were not present in photographs acquired in 1954.
51	674547.37725	1173072.08983	1944	Many of the trees were cleared in this area between 1940 and 1944. By 1954, the area had become reforested.
52	674633.59531	1171964.02811	1944	This area was cleared between 1940 and 1944. The area is east of several areas containing unidentified objects. Vegetation regrowth was evident in 1954 and by 1961, the area had become revegetated.
56	675367.76910	1171533.42909	1944	A structure (above-ground storage tank) was constructed between 1940 and 1944. The above-ground storage tank is present in photographs from 1944 through 1994.
57	675410.93954	1171659.44010	1944	This area was cleared between 1940 and 1944. The cleared area is likely associated with the above-ground storage tank located southwest of the cleared area. The area had become revegetated by 1954.
58	675492.61334	1171721.27883	1944	This area was cleared between 1940 and 1944. The cleared area is likely associated with the above-ground storage tank located southwest of the cleared area. The area had become reforested by 1954.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
63	675557.95238	1171583.60014	1944	Some of the trees were cleared in this area between 1940 and 1944. The anomalous area is likely associated with the above-ground storage tank (located west of this anomaly). The area had become reforested by 1954.
64	675437.77521	1171545.09677	1944	This area was cleared between 1940 and 1944. The cleared area is likely associated with the above-ground storage tank located west of the cleared area. This area remained maintained (mowed) through 1994.
68	675451.77644	1171475.09066	1944	This area was cleared between 1940 and 1944. The cleared area is likely associated with the above-ground storage tank located west of the cleared area. The area had become reforested by 1954.
69	675377.10325	1171415.58546	1944	This area was cleared between 1940 and 1944. The cleared area is likely associated with the above-ground storage tank located north of the cleared area. By 1961, vegetation regrowth was underway and by 1982, the area had become reforested.
70	675741.13505	1171613.93612	1944	Some of the trees were cleared in this area between 1940 and 1944. By 1954, vegetation regrowth was evident.
71	675778.47165	1171433.08699	1944	Some of the trees were cleared in this area between 1940 and 1944. By 1954, vegetation regrowth was evident in the eastern portion of the area and the western portion of the anomaly remained free of trees. The land cover of the western portion of the anomaly included human activity likely associated with the above-ground storage tank that is located north of the anomalous area.
72	675584.78806	1171272.07292	1944	Most of the trees were cleared in this area between 1940 and 1944. By 1954, the area had become reforested.
75	675848.01288	1171310.08405	1944	Some of the trees were cleared in this area between 1940 and 1944. By 1954, the area had become reforested.
76	675535.81112	1170993.32461	1944	This area was cleared between 1940 and 1944. By 1954, vegetation regrowth was evident in the area and by 1961, the area had become reforested.
77	675704.65929	1171784.22623	1944	Some of the trees were cleared in this area prior to 1944. The tree removal may have been associated with above-ground storage tank activities. By 1954, vegetation regrowth was underway.
78	675525.28927	1173490.68939	1944	Many of the trees were cleared in this area between 1940 and 1944. This tree clearing activity occurred outside the study area as well. By 1954, the area had become reforested.
79	675986.09330	1170862.45126	1944	Most of the trees were cleared in this small area before 1944. By 1954, the area had become reforested.
80	675561.86985	1169826.23332	1944	This trapezoidal area was cleared between 1940 and 1944. By 1954, vegetation regrowth was underway and by 1961, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
81	675235.00916	1170000.09539	1944	A new trail was evident in this location in 1944. The trail led to anomaly of potential concern 80. The trail was not evident in photographs acquired in 1954.
84	673888.69888	1175043.87260	1954	A trail was present in this area in 1954. A cleared area was present at the end of the trail. This cleared area may be a vehicle turnaround area but additional information is required to determine the activities associated with this anomaly. In 1961, the cleared area was no longer present and the trail had been extended to intersect with a road.
88	673766.34402	1174674.80218	1954	A trail was present in this area in 1954 and 1961. By 1969, most of the trail was no longer present. By 1994, no indication of a trail was evident.
98	674676.98515	1173780.20758	1954	This area was cleared between 1944 and 1954; two trails led to the area. In 1961, the area remained clear and areas east and south were cleared as well. In 1969, the area remained clear and buildings had been constructed. In 1982, a portion of the area had begun to revegetate while the rest of the area remained clear. In 1994, most of the area had become reforested.
162	675598.43976	1171924.48068	1954	The area was cleared prior to the acquisition of the 1954 photographs. The area remained clear in 1961, but had begun to revegetate by 1969. This area is north of the above-ground storage tank and may have been caused by tank-related activities.
176	676468.90190	1171650.41704	1954	Most of the trees were cleared in this area prior to the acquisition of the 1954 photographs. By 1969, the northern portion of the area had become reforested while the southern portion of the area remained clear. By 1982, the entire area was forested.
177	676432.42493	1171409.26372	1954	All of the trees were cleared in this area between 1944 and 1954. Vegetation regrowth was evident in 1961 and by 1969, the area had become reforested.
184	673919.20336	1175122.56483	1961	A trail was present in this area in 1961. By 1969, the trail was overgrown and by 1982, the trail was no longer evident.
187	673943.03247	1175021.95302	1961	This trail extension was constructed before 1961. Anomaly of potential concern 84 was extended and created this land cover anomaly. By 1969, the trail was no longer evident.
208	673921.85103	1173266.54180	1961	This area was cleared between 1954 and 1961. By 1969, vegetation regrowth was underway and by 1982 the area had become reforested.
209	673956.27086	1173274.48483	1961	This area was cleared between 1954 and 1961. By 1969, vegetation regrowth was underway and by 1982, the area had become reforested.
259	674704.05402	1173659.80987	1961	This area was cleared prior to 1961. The northern portion of the area remained clear in 1969 while the southern portion of the area had begun to revegetate. By 1982, most of the area had become reforested. Reforestation of the area was complete by 1994.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
260	674606.43288	1173739.30136	1961	A trail was evident in this area in 1961. By 1969, the trail was no longer evident. The trail may have been used for construction activities within Area T-38.
264	674649.66510	1173594.26425	1961	All of the trees were cleared from this area prior to 1961. The area remained clear in 1969. By 1982, the area had become reforested.
265	674683.13520	1173583.10755	1961	A trail was evident in this area in 1961. By 1969, the trail was no longer evident. The trail may have been used for construction activities within Area T-38.
266	674743.10247	1173571.95085	1961	A trail was evident in this area in 1961. By 1969, the trail was no longer evident. The trail may have been used for construction activities within Area T-38.
269	674836.53984	1173744.87971	1961	This area was cleared between 1954 and 1961. The area remained clear in 1969. In 1982, parts of the northern portion of the area remained clear while the rest of the area had begun to revegetate. By 1994, the area had become reforested.
270	674741.70788	1173843.89543	1961	Most of the trees were cleared in this area prior to 1961. By 1969, most of this area had become revegetated.
271	674902.08545	1173821.58203	1961	All of the trees were cleared in this area before 1961. The area remained clear in 1969. In 1982, the northern portion of the area remained clear while the rest of the area had become reforested. By 1994, the entire area was reforested.
272	674808.64808	1173662.59904	1961	Most of the trees were cleared in this area before 1961. In 1969, the western half of the anomalous area remained clear. By 1982, vegetation regrowth was underway and by 1994, the area had become reforested.
273	675013.65246	1173623.55059	1961	Most of the trees were cleared in this area before 1961. The 1969 photographs show that the area had been cleared. By 1982, the area had become reforested.
274	674889.53416	1173612.39389	1961	A trail was evident in this area in 1961. By 1969, the trail was no longer evident. The trail may have been used for construction activities within Area T-38.
277	674731.94577	1173513.37817	1961	A trail was present in this area in 1961. By 1969, the trail was no longer evident.
280	674881.16664	1173438.07044	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
281	674868.26690	1173461.87910	1961	A trail was present in this area in 1961. By 1969, the trail was no longer evident.
282	674924.39885	1173415.75704	1961	A trail was present in this area in 1961. By 1969, the trail was no longer evident.
283	675023.41457	1173139.62870	1961	A trail was present in this area in 1961. By 1969, the trail had been re-routed. The re-routed trail was in use in 1982 but was no longer present in 1994 photographs.
284	674939.73932	1173298.61168	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
286	674870.00994	1173235.85524	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
287	674904.87463	1173085.23978	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
288	675176.81921	1173090.81813	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
289	675126.61405	1173255.37947	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
290	675088.96019	1173426.91374	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
291	675102.90606	1173361.36813	1961	A trail was present in this area in 1961. By 1969, the trail was no longer evident.
292	674973.58213	1173416.46803	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
293	674986.48637	1173457.52697	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
294	675055.70001	1173391.83266	1961	A trail was present in this area in 1961. By 1969, the trail was no longer evident.
295	675114.02113	1172985.57825	1961	A trail was present in this area in 1961. By 1969, the trail was no longer evident.
296	675048.72091	1172669.38774	1961	All of the trees were cleared in this small area between 1954 and 1961. By 1969, the area had become reforested.
299	675490.92939	1171791.84449	1961	Some of the trees were cleared in this small area before 1961. By 1969, the area had been cleared. In 1982, vegetation covered the anomalous area. Activities in this area may be associated with the above-ground storage tank located southwest of the anomaly.
306	675778.47946	1171430.97487	1961	This area was cleared between 1954 and 1961. In 1969, vegetation regrowth of the area was underway and by 1982, the area had become reforested.
307	675493.22062	1171292.35512	1961	All of the trees were cleared in this area before 1961. By 1969, the area had become reforested.
309	675977.81696	1171718.52495	1961	Most of the trees were cleared in this area prior to the acquisition of the 1961 photographs. By 1969, vegetation regrowth of the area was underway. The 1982 photographs show that the area had become reforested.
310	676154.49271	1172092.64076	1961	All of the trees were cleared in this area between 1954 and 1961. By 1969, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
311	676202.82346	1171972.70890	1961	This area was cleared before 1961. The area remained clear in 1969 and 1982. By 1994, the area had become reforested.
312	676399.72652	1172037.14990	1961	All of the trees were cleared in this area between 1954 and 1961. All vegetation was cleared in this area in 1969 (see anomaly of potential concern 427). By 1982, the area had become reforested.
313	676319.17527	1171467.92105	1961	All of the trees were cleared in this area between 1954 and 1961. The area remained clear in 1969. By 1982, the area had become reforested.
315	676573.35923	1171321.13876	1961	Some of the trees were cleared in this area between 1954 and 1961. By 1969, all of the trees had been removed from this area. By 1982, the area had become reforested.
319	674229.39902	1175167.59142	1969	Some of the trees were cleared in this area between 1961 and 1969. By 1982, most of the area had begun to revegetate. By 1994, the area had become reforested.
320	673968.45019	1175153.71116	1969	Some of the trees were cleared in this area between 1961 and 1969. By 1982, all of the trees had been cleared. By 1994, the area had become reforested.
327	674035.07542	1174909.41864	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
335	673845.04714	1174450.57382	1969	All of the vegetation was cleared in this area prior to the acquisition of the 1969 photographs. By 1982, the area had become reforested.
354	674740.04119	1173588.38680	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
355	674804.99538	1173604.30694	1969	All of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
356	674797.35371	1173825.91538	1969	All of the trees were cleared in this area before 1969. In 1982, the northern portion of the area remained clear while the southern portion of the area had become reforested. By 1994, the entire area had become reforested.
358	674736.85716	1173541.89997	1969	All of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
359	674796.71691	1173525.34302	1969	This area was cleared between 1961 and 1969. Vegetation regrowth was evident in 1982 and by 1994, the area had become reforested.
360	674789.07524	1173487.77148	1969	This area was cleared between 1961 and 1969. By 1982, vegetation regrowth was underway and by 1994, the area had become reforested.
361	674785.89121	1173480.76661	1969	This small area was cleared between 1961 and 1969. In 1982, the area remained clear. Vegetation regrowth was underway by 1994.
363	674754.68772	1173502.41801	1969	This area was cleared between 1961 and 1969. By 1982, vegetation regrowth was underway and by 1994, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
364	674759.14536	1173508.78607	1969	This small area was cleared between 1961 and 1969. By 1982, vegetation regrowth was underway and by 1994, the area had become reforested.
365	674797.35371	1173438.10062	1969	This area was cleared between 1961 and 1969. In 1982, the area remained clear. Vegetation regrowth was underway by 1994.
366	674920.25724	1173609.40139	1969	All of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
367	674886.50653	1173716.38477	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
375	674790.34885	1173413.26519	1969	This area was cleared between 1961 and 1969. By 1982, the area had become reforested.
380	674866.76555	1173367.41517	1969	All of the trees were cleared in this area prior to the acquisition of the 1969 photographs. By 1982, the area had become reforested.
381	674782.70718	1173387.15615	1969	All of the trees were cleared in this area prior to the acquisition of the 1969 photographs. By 1982, the area had become reforested.
382	674860.90265	1173348.81309	1969	This small area was cleared between 1961 and 1969. By 1982, the area had become reforested.
384	674898.60584	1173506.23884	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested. Trees were cleared in the western portion of this area between 1982 and 1994 (see anomaly of potential concern 573).
386	674999.85797	1173564.18818	1969	This area was cleared between 1961 and 1969. Vegetation regrowth was evident by 1982. A portion of the area was again cleared between 1982 and 1994 for the construction of a building.
387	675029.78784	1173520.88538	1969	All of the trees were cleared in this area prior to the acquisition of the 1969 photographs. By 1982, the area had become reforested.
397	674947.63989	1173085.31018	1969	Most of the trees were cleared in this area before 1969. The area remained partially clear in 1982. In 1994, two small buildings were present in the area.
398	674997.94755	1173033.72891	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
399	675031.69826	1173101.86714	1969	All of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
400	674998.58436	1173204.39288	1969	All of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
402	675082.64273	1173313.28668	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
403	675051.43924	1173347.67419	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
404	675055.89688	1173424.09089	1969	Most of the trees were cleared in this area before 1969. By 1982, the area had become reforested.
410	674815.47780	1173729.25024	1969	All of the trees were cleared in this area before 1969. Vegetation regrowth was underway by 1982 and by 1994, the area had become reforested.
411	675497.05905	1171913.35859	1969	All of the trees were cleared in this area before 1969. Vegetation regrowth was underway by 1982 and by 1994, the area had become reforested.
413	675556.75960	1171790.22621	1969	All of the trees were cleared in this area before 1969. Vegetation regrowth was underway by 1982 and by 1994, the area had become reforested.
418	675504.52162	1171514.11118	1969	This area was cleared between 1961 and 1969. Vegetation regrowth was underway by 1982. In 1994, a mixture of shrub and trees covered the area.
419	675418.70208	1171335.00953	1969	This area was cleared between 1961 and 1969. By 1982, the area had become reforested.
423	676299.32403	1171335.78689	1969	This area was cleared between 1961 and 1969. By 1982, the area had become reforested.
424	676485.88824	1171518.46434	1969	All vegetation was cleared in this area prior to the acquisition of the 1969 photographs. By 1982, most of the area had become reforested; the eastern corner of the area was beginning to revegetate. By 1994, the entire area had become reforested.
425	676402.32302	1171545.67162	1969	This area was cleared between 1961 and 1969. By 1982, the area had become reforested.
427	676396.49289	1172031.51592	1969	All of the trees were cleared in this area between 1954 and 1961 (see anomaly of potential concern 312). All vegetation was cleared in this area before 1969. By 1982, the area had become reforested.
431	676571.39683	1172328.85263	1969	All of the trees were cleared in this area prior to the acquisition of the 1969 photographs. By 1982, most of the area had become reforested; the western corner of the area was beginning to revegetate. By 1994, the entire area had become reforested.
433	676602.49087	1172220.02351	1969	This area was cleared between 1961 and 1969. By 1982, the area had become reforested.
460	674985.26325	1173385.59107	1969	All of the trees were cleared in this area prior to the acquisition of the 1969 photographs. By 1982, the area had become reforested.
477	673897.56987	1172750.70609	1982	Some of the trees were cleared in this area prior to the acquisition of the 1982 photographs. In 1994, a road transected the eastern portion of the anomalous area.
521	674743.92719	1173850.10361	1982	Some of the trees were cleared in this area between 1969 and 1982. By 1994, the area had become reforested.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
522	674783.21097	1173735.52592	1982	Most of the trees were cleared in this area between 1969 and 1982. By 1994, vegetation regrowth was underway.
524	674822.49475	1173683.14754	1982	Most of the trees were cleared in this area between 1969 and 1982. By 1994, vegetation regrowth was underway.
536	676433.89704	1172259.72429	1982	This area was cleared between 1969 and 1982. The area remained clear in 1994.
549	676712.66866	1171628.01244	1982	All of the trees were cleared in this area between 1969 and 1982. By 1994, the area had become reforested.
560	674573.51408	1173822.67985	1994	Most of the trees were cleared in this area between 1982 and 1994.
569	674843.05884	1173577.94673	1994	Most of the trees were cleared in this area between 1982 and 1994.
570	674947.94446	1173601.63058	1994	All of the trees were cleared in this area between 1982 and 1994.
573	674882.53192	1173509.15079	1994	All of the trees were cleared in this area between 1982 and 1994.
574	674892.68214	1173439.22704	1994	All of the trees were cleared in this small area between 1982 and 1994.
578	675085.53635	1173373.81451	1994	Most of the trees were cleared in this area between 1982 and 1994.
593	674228.58492	1172381.21027	1994	Most of the trees were cleared in this area between 1982 and 1994.
598	675225.40324	1170979.89616	1994	All of the trees were cleared in this area between 1982 and 1994.

Fig 4